

REMARKS/ARGUMENTS

The Final Office Action of January 15, 2008 has been carefully reviewed and this paper is Applicants' response thereto. Claims 1-23 are pending in the application. Claims 1-14 and 16-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable in view of U.S. Patent No. 6,639,234 to Badura *et al.* ("Badura") in view of U.S. Patent No. 3,916,923 to Branton ("Branton"). Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,540,681 to Strul *et al.* ("Strul") in view of Branton. Applicants respectfully traverse the rejection in view of the following remarks.

Rejection under 35 U.S.C. §103 – Badura and Branton

Claims 1-14 and 16-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Badura in view of Branton. Claims 1 and 11 are independent.

As admitted in the Final Office Action, Badura fails to disclose "in response to receiving the ON command signal, initiating a cycle ON timer to operate for a predetermined cycle ON time." The Office Action suggests, however, that Branton corrects the deficiency in Badura. In an apparent recognition that the rationale for the combination is difficult to support, the Office Action indicates that Branton is being used for a limited purpose:

The teachings for which the Branton device is being relied upon are not washing
and sanitizing, but rather the features of initiating a cycle ON timer.

Final Office Action, pg 6. As noted in the prior response, however, the rationale for making the combination of Branton with Badura is not supported. Those reasons are incorporated in this response as well because the suggestion that a person of skill in the art would find it obvious to use the timer motor of the milking system of Branton to modify the microprocessor controlled ion-beam system of Badura is contrary to Applicants' understanding of what can properly be considered common sense. Instead, the systems are so disparate that any attempt to combine the references can only be a result of an improper hindsight reconstruction.

In addition to respectfully disagreeing with the propriety of combining the milking system of Branton with the ion-beam system of Badura, however, the combination does not support the rejection. The Office Action states:

One of ordinary skill in the art would have found it obvious to use the initiating cycle ON timer that is responsive to receiving the ON command signal as taught by Branton for providing safety in addition to the redundancy means disclosed in the device of Badura et al for ion beam therapy.

Final Office Action, pg. 3. Furthermore, the Office Action suggests that:

One of ordinary skill in the art would have found it obvious to use a timer for timing the interval between the first termination request and the second redundant request because ion beam therapy may comprise residual particle counts. Badura et al suggests that high particle counts should trigger an alarm for switching off the beam and that particle count may vary. See col. 11, lines 31-59.

Final Office Action, pg. 3-4. These comments highlight the problem with the combination – claim 1 recites “in response to receiving the ON command signal, initiating a cycle ON timer to operate for a predetermined cycle ON time.” However, the above rationale provided by the Office Action is not applying the teaching of Branton to an “ON command signal.” Therefore, the rejection fails on two fronts: 1) it does not address the recited feature because what is recited is not a termination request, and 2) no support is provided for why the disclosure in Branton regarding the use of the timer motor should apply to the interval between two termination requests. In other words, the rationale for the combination of references appears to be conclusory without the required support and logical underpinnings required. *KSR Int'l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727, 1741 (2007) (“To facilitate review, this analysis should be made explicit. See *In re Kahn*, 441 F.3d 977, 988 (C.A.Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”). “).

Furthermore, the statement that the timer system of Branton will not interfere with the functionality of Badura has not been supported. Instead, it appears that the combination of Branton and Badura will not work. Branton discloses the use of a timer motor that is calculated to last slightly longer than the time required to perform a wash and rinse cycle. While there is

nothing equivalent to a wash and rinse cycle in Badura, the wash and rinse cycles of Branton are more akin to the calibration procedures disclosed by Badura than the treatment procedures disclosed by Badura because the wash and rinse cycles were done in preparation of using the milking system of Branton. Plainly, applying a timer functionality of Branton to the calibration procedures of Badura does not address the features cited in claim 1. Furthermore, attempting to apply the timer of Branton to the treatment procedure of Badura would fail. In Branton, the length of wash and rinse cycles was known, therefore it was relatively simple to provide a timer that would end slightly after the two cycles were complete. In stark contrast, Badura explains that the time of treatment may vary:

increase speed of the magnet current supply devices. The scan speed of the treatment beam depends on the particular intensity of the beam and the planned particle coverage. In order to ensure that the maximum scan speed is not achieved during the irradiation, the particle rate extracted from the 20 synchrotron 5 is not permitted substantially to exceed the desired value. If, on the other hand, the rate falls distinctly short of that value, the total irradiation time is extended, the supervisory control and surveillance or monitoring system in that case optionally being operated in the range of very small 25 input currents, which can adversely affect the accuracy of the beam detection. Accordingly, in the present therapy system, measurement and protocolling of the particle intensities in the synchrotron is provided in the upper intensity range and measurement and recording of the particle rate 30 delivered to the irradiation site is provided for all levels of intensity for a plurality of energies over a few minutes. The

Badura, Col. 7. Ln. 16-32. Thus, attempting to use the timer of Branton would cause the system of Badura to fail to work as intended because the length of treatment would vary depending on the patient's needs and would also vary depending on the measured strength of the ion-beam being applied. No support has been provided for how a person of skill in the art would modify the timer motor disclosed by Branton (which is a somewhat crude method of cutting off of power to the entire system) for use with the system of Badura. Indeed, Applicants respectfully submit that is unclear how such a modification would even be possible.

Therefore, for at least the above reasons, the rejection of claim 1 based on the combination of Badura and Branton fails to support a *prima facie* case of obviousness. Accordingly, claim 1 is patentable over these references.

Claims 2-10 depend from claim 1. Therefore, claims 2-10 are patentable for at least the reasons that claim 1 is patentable and for the additional features recited therein.

Independent claim 11 has been amended to recite “a cycle ON timer within the second component, wherein, in operation, the cycle ON timer is activated in response to the second component receiving the ON command signal.” For reasons similar to the reasons discussed above with respect to claim 1, the combination of Badura and Branton fails to support a *prima facie* case of obviousness with regards to claim 11. Consequently, claim 11 is patentable in view of Badura.

Claims 12-14 and 16-23 depend from claim 11. Therefore, claims 12-14 and 16-23 are patentable for at least the reasons that claim 11 is patentable and for the additional features recited therein.

Accordingly, withdrawal of this ground of rejection is respectfully requested.

Rejections of 35 U.S.C. §103 – Strul and Branton

Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Strul in view of Branton. As previously noted in Applicants’ prior response, no proper support has been given for why Strul can be said to render claim 15 obvious. For example, claim 15 depends from claim 11, which recites two components, and the Office Action has failed to explain the rationale for why Strul is believed to disclose the recited features of claim 11. Instead, the Office Action merely includes the following:

One of ordinary skill in the art would have found it obvious to use the initiating cycle ON timer that is responsive to receiving the ON command signal as taught by Branton for providing safety to the device disclosed in Strul et al.

Strul et al disclose software controlled limits for temperature, power, and impedance (that turn off power if exceeded), there are also redundant hardware controls, including comparators 90, 96, that turn off power if the maximum temperature or power is exceeded. One of ordinary skill in the art would have found it obvious to provide a timer for initiating the redundant hardware controls because temperature, power, and impedance have residual energy capacities that diminish with time to allow for a more accurate determination of whether they have been exceeded.

Final Office Action, pg. 5. However, there has been no support provided for how a timer based on the system of Branton would be implemented; the timer motor of Branton could not readily be inserted into the system of Strul. Furthermore, it appears that the desired "on time" in the system of Strul would vary depending on a number of factors such as the amount of tissue being ablated, the type of tissue and the energy level being used. The Office Action has provided no support for how the timer of Branton would apply in the face of these variables. The Office Action has also failed to support the conclusory suggestion that a timer would help account for the alleged diminished capacities. For example, the Office Action has failed to provide any support for the suggestion that the treatment disclosed by Strul is being applied for a long enough period to even need to be concerned with the alleged diminishing of energy capacities.

In addition, Applicants respectfully submit it would not be obvious to adapt the radio frequency ablation method of Strul where the RF energy is controlled based on monitoring temperature and power to include the features recited in claim 15. For example, there has been no support provided to show how Strul is believed to disclose a component that both could receive the signal and is also implantable. Plainly, the sanitizing system of Branton does not help in this regard. Therefore, for at least the above reasons, Strul cannot be said to support a *prima facie* case of obviousness with respect to claim 15.

Thus, for at least the above reasons the combination of Branton and Strul fails to support

a *prima facie* case of obviousness. Accordingly, withdrawal of this ground of rejection is respectfully requested.

CONCLUSION

All rejections having been addressed, Applicants respectfully submit that the instant application is in condition for allowance, and respectfully solicit prompt notification of the same. Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the number set forth below.

Respectfully submitted,

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